MEMORANDUM **State of Alaska**
Department of Fish and Game

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Subject: Preliminary 2004 Sport Harvests Of Chinook Salmon In Southeast Alaska

Anglers harvested 87,514 Chinook salmon in the Southeast Alaska sport fishery during 2004 (Table 1) based on a preliminary analysis of onsite marine creel surveys conducted in major ports and the recent expansion factor for unsurveyed areas. This estimate is 26% greater than the 2003 fishery harvest and represents the largest annual sport harvest in Southeast Alaska. Estimated harvests met or exceeded recent 5-year average levels in Ketchikan, Prince of Wales, Sitka, Juneau, Haines-Skagway, and Glacier Bay; the estimates for the Prince of Wales, Sitka, and Glacier Bay areas are the largest in the history of those fisheries.

The all-gear preseason harvest quota (383,536 treaty Chinook salmon) for all Southeast Alaska fisheries was the largest in the history of management under the Pacific Salmon Treaty since 1985. However, the estimated harvest of treaty Chinook salmon in the 2004 sport fishery was 7% below the sport fishery allocation. The estimated harvest of Alaska hatchery fish in terminal areas near Juneau was above average and at Ketchikan was slightly below average; hatchery fish contributed significantly to both of those fisheries. Along the outer coast of Southeast Alaska near the ports of Sitka and Craig, the estimated harvests for treaty Chinook salmon was above average while the Alaska hatchery Chinook salmon harvest was below average.

Treaty Harvests:

A preseason 2004 Abundance Index of 1.83 was released by the Chinook Technical Committee (CTC) on April 6, 2004, and was subsequently revised on April 30 to 1.88. Based on guidelines provided in the Pacific Salmon Treaty and the Southeast Alaska King Salmon Management Plan (5 AAC 47.055), the final revised pre-season abundance index equates to a sport fishery allocation of 71,689 treaty Chinook salmon. As outlined in the plan under that level of abundance, sport fishery managers established a bag limit of two fish for resident anglers and continued a 1-fish bag limit and an annual limit of 3 fish for nonresident anglers.

Biweekly harvest estimates of treaty Chinook followed the recent 5-year average trend (Figure 1). Treaty harvests were relatively low through May 23, as the sport fishery is usually just gearing up at this time. The harvest then increased to typically high harvest levels during May 24 to July 4; harvests peaked during the June 7-20 biweek, when an estimated 13, 000 treaty fish were harvested. The typical peak in treaty harvest based on the recent 5-year average is during June 21 to July 4; however, in 2004 the treaty harvest peaked during June 7 to 20. A drop in the treaty harvest during the first half of July was expected due to the commercial troll opening during this

period. Treaty harvest remained strong during July 19 to August 29, particularly at the outer coast ports of Sitka and Craig.

After discounting for Alaska hatchery contributions, Situk River and terminal area harvests, an estimated 66,400 treaty Chinook salmon (hatchery add-on = 16,600) will count toward the sport fishery allocation:

Sport Fishery	Harvest	Not Counted
SE Total Sport Harvest	87.5	
AK Terminal Harvests (*Blind Slough, Wrangell Narr., DIPAC)*	(4.0)	4.0
Situk Terminal	(0.5)	0.5
SUBTOTAL	**83.0**	**4.5**
AK Hatchery Contributions (Non-Terminal)	(19.4)	16.6
Risk Adjustment + Base Catch	2.8	
TOTALS	**66.4**	**21.1**

Harvest estimates will be finalized after statewide harvest survey estimates are obtained in 2005. Based on the preseason abundance index and preliminary estimates, the 2004 treaty harvest was 7% less than the allocation for the sport fishery.

Recent Harvest Performance of all SE AK Chinook salmon Fisheries

The Alaska Board of Fisheries has allocated treaty fish (i.e., non-Alaska hatchery fish) among the sport and commercial (net and troll) fisheries in SE Alaska; after net harvests are deducted from the treaty quota, the commercial and troll harvest is managed for an 80-20 split (Table 2). During the period of 1999-2001, the sport harvest exceeded the 20% level (23.6% to 28.6%); while the troll harvest was subsequently below the 80% level (71.4% to 76.4%). During the period of 2002-2004 the sport harvest was below the 20% level (13.2% to 17.1%), and thus the troll harvest was above the 80% level (82.9% to 86.8%).

The final all-gear treaty quota (which includes quotas for the troll, sport, seine, trap, drift gillnet, and set gillnet fisheries) is based upon the post-season Abundance Index calculated by the Chinook Technical Committee (CTC). The annual all-gear treaty harvest versus the all-gear treaty quota during 1999-2004 has fluctuated from 25% less than the quota (63,340 treaty fish below the quota in 2001) to 12% above (45,238 treaty fish above the quota in 2004; see Table 3).

Salmon Fishing Effort

Marine creel surveys conducted at the ports of Ketchikan, Sitka, and Juneau provide estimates of the salmon fishing effort (number of rod hours) expended at these three ports (Table 4). In 2004, salmon fishing effort in Ketchikan was 3% lower than the 2003 estimate, and 8% higher than the five-year average (1999-2003). Salmon fishing effort in Sitka in 2004 was 2% lower than the 2003

estimate, and 8% lower than the five-year average. In Juneau, the salmon fishing effort in 2004 was 19 % higher than the 2003 estimate, and 0.5% lower than the five-year average.

Harvest Rates

Harvest rates in nearly all ports were stronger than their respective five-year averages, especially during June and July (Figure 2, 3, and 4). The season's cumulative harvest rate in Sitka was 83% higher than the five-year average, 53% higher in Craig, 12% higher in Ketchikan, 9% higher in Wrangell, 8% higher in Juneau and Gustavus, and 21% lower in Petersburg (Table 5). The harvest rates on the outer coast (such as at Sitka and Craig) were well above average during the 2004 season, while the inner ports were much closer to the five-year averages (Figure 2, 3, and 4).

Sitka's harvest rates from late April to September were above average for all but two weeks (Figure 2). The typical drop in Chinook harvest rates following the early July commercial troll opening occurred, but harvest rates remained above average for that period. Harvest rates in Sitka experienced a minor spike during July 26 to August 1, and then remained relatively stable until the end of August, which is a secondary peak pattern recently observed in Sitka.

Harvest rates in Craig were above average for the entire season, except for the first week of the survey during May 10-16. The harvest rates peaked during June 14-20, and then steadily dropped for the remainder of the season (Figure 2). There was another late season spike in August in harvest rates in Craig, which is typical of the time period although more sustained than in previous years.

In Juneau and Ketchikan, harvest rates rapidly improved with the arrival of Alaska hatchery stocks at terminal harvest areas (THA) during early June (Figure 3). Availability of hatchery Chinook in THAs decreased in Juneau and Ketchikan beginning July 5, contributing to the decline in harvest by anglers fishing near these ports.

In Petersburg, harvest rates increased rapidly with the arrival of the Alaska hatchery stocks at the terminal harvest area (THA) in Wrangell Narrows and Blind Slough (Figure 4). The peak of the availability of hatchery Chinook salmon in the Petersburg THA lasted during the typical period from mid-June to early July, and harvest rates dropped significantly following early July. The average to poor return of hatchery Chinook salmon in Petersburg in 2004 is indicated by the average to poor harvest rates.

In Wrangell, the harvest rates during the 2004 season were better than the five-year average for the majority of the season, although no significant peaks in harvest rates occurred (Figure 4).

Harvest rates at Gustavus peaked in late-May and then again in mid-June (Figure 5). Comments from anglers interviewed by the harvest sampler in Gustavus indicated that Chinook salmon fishing was relatively poor this year in local Gustavus waters (such as Homeshore), and that more anglers targeting Chinook salmon are making the trip west to the Cross Sound area to find better success.

Harvest rates at Elfin Cove remained strong during early May to mid-August, with the peak of harvest rates occurring during June 7-13 and the only significant decrease occurring during the early July commerical troll opening (Figure 5). The strong harvest rates during mid-July to mid-

August, unlike the dramatic drop in harvest rates at Gustavus during this time period, illustrates the strong abundance of Chinook salmon in the outer coast waters during the latter half of summer.

Stock Contribution:

Alaska hatcheries contributed about 4,000 fish to terminal fisheries and 19,400 fish to mixed stock harvests. Preliminary sampling results for the mixed stock fisheries show a mix of Alaska hatcheries contributing to harvests; Macaulay (Gastineau) Hatchery near Juneau was the largest contributor (29%) of the Alaska hatchery harvest, followed by Whitman Lake Hatchery (22%) near Ketchikan, Medvejie Hatchery (19%) near Sitka, Neets Bay (7%) near Ketchikan, Tamgas Creek (5%) near Metlakatla and Crystal Lake/Anita Bay (5%) near Wrangell (Table 6). These estimates do not include some terminal fisheries, Haines/Skagway fishery CWT sampling, and are based on data not yet expanded to the season/region. The total contribution of Alaska hatchery Chinook salmon (23,500 fish) was 27% of the estimated sport harvest, which is similar to the recent five-year average of 26%.

Contributions of Alaska hatchery stocks to the inside fisheries were 19% above the recent 5-year average and contributed over half (56%) of the Chinook salmon harvest in Juneau and Ketchikan (Figure 6). Looking at each individual Southeast Alaska area, the largest Alaskan hatchery contribution occurred in Juneau (60%), followed by Ketchikan (51%), Gustavus (42%), Petersburg (28%), Wrangell (25%), Elfin Cove (14%), Sitka (7%), and Craig (1%). Many Juneau, Ketchikan, and Petersburg anglers took advantage of designated THAs in pursuit of Chinook salmon during June through mid-July. Terminal Alaska hatchery harvests included about 1,500 fish (Gastineau) in the Juneau area and 2,500 fish (Crystal Lake) in the Petersburg area. Overall, these THAs contributed over half of the total Chinook salmon harvest in those ports.

Contributions of non-Alaska hatchery Chinook salmon to the outer coast fisheries of Sitka and Craig (11,777 Chinook salmon) was up 71% from the recent 5-year average (Table 6 and Figures 7 and 8). Contribution of West Coast Vancouver Island (WCVI) hatchery Chinook salmon stocks (9,289 Chinook) took place from early May to the end of August, ranging from 746 fish (early May) to 1,474 fish (first half of June) per biweek period (Figure 7). Lower 48 hatchery stocks (1,992 Chinook) contributed 1% less than the recent 5-year average with contributions on a biweekly basis generally ranging from 72 to 490 fish during mid-May to the end of August-with the peak contribution during the middle of July (Figure 8). The peak of the Alaska hatchery contribution for the outer coast fisheries occurred during mid-May to the end of June (Figure 9), and was primarily due to Medvejie hatchery recoveries in Sitka (i.e., 6% of the total Sitka Chinook salmon harvest was of Medevejie origin).

Based on onsite catch sampling in 2004 at Gustavus and Elfin Cove and charter vessel logbook returns, 484 Chinook salmon were landed by marine boat sport anglers at Gustavus and 2,253 Chinook were landed in Elfin Cove (Table 6). Of the 484 Chinook salmon landed in Gustavus, 205 (42%) were of Alaska hatchery origin and 53 (11%) were of West Coast Vancouver Island (WCVI) or Lower 48 hatchery origin. Of the 2,253 Chinook salmon landed in Elfin Cove, 322 (14%) were of Alaska hatchery origin and 800 (36%) were of British Columbian and Lower 48 hatchery origin.

Recoveries of tagged Alaska wild Chinook salmon in sampled sport fisheries were primarily comprised of fish from the Taku River during 2004. There were 9 random recoveries of this stock:

8 in Juneau and 1 in Elfin Cove (Table 7). Additionally, 5 Unuk River Chinook were randomly recovered: 4 in Ketchikan and 1 in Sitka. Both Petersburg and Wrangell had 1 random recovery of Stikine River Chinook. Two Chilkat River heads were randomly recovered in the Juneau sport fishery, and one Chickamin River head was randomly recovered in the Ketchikan sport fishery.

Distribution:

Holmes-SF RI	McPherson-SF RI	Bentz-SF HQ (JNU)	Brock-SF HQ (JNU)
Hepler-SF HQ (ANC)	Ericksen-SF HNS	Fleming-SF PBG	Fleischman-SF ANC
Johnson-SF YAK	Hoffman-SF KTN	Freeman-SF KTN	M. Wood- SF KTN
Brookover-SF SIT	Pahlke-SF RI	Chadwick-SF SIT	Schwan-SF RI
Bingham-SF ANC	McCurdy-SF CRG	G. Williams-CF-HQ	J.Carlile-CF RI
Glynn-SF RI	Weller–SF KTN	Der Hovanisian-SF RI	Wendt-SF KTN
E. Jones-SF RI	B. White-CF HQ	Lum-SF RI	

Table 1. Estimated sport harvest of Chinook salmon in Southeast Alaska by area, 1977-2004 (2004 estimates are preliminary).

Year	Ketchikan	Prince of Wales	Petersburg-Wrangell	Sitka	Juneau	Haines-Skagway	Glacier Bay	Yakutat	Total
1977	4,672	811	2,671	1,738	6,377	471	356	353	17,449
1978	3,845	1,817	2,109	1,841	5,686	769	315	257	16,639
1979	4,165	863	2,173	2,054	5,935	664	282	445	16,581
1980	5,415	1,274	3,495	1,489	7,068	792	241	439	20,213
1981	5,683	1,294	2,906	1,955	7,722	1,372	184	184	21,300
1982	6,215	933	4,076	1,781	10,614	1,592	147	398	25,756
1983	7,968	1,543	3,332	2,108	5,431	1,426	157	356	22,321
1984	5,063	1,095	3,067	2,251	8,948	1,313	129	184	22,050
1985	6,170	534	4,060	1,430	10,376	2,041	186	61	24,858
1986	6,197	987	3,906	1,902	7,213	2,054	183	109	22,551
1987	5,826	649	3,534	2,537	9,857	1,419	258	244	24,324
1988	7,422	1,135	4,668	3,539	7,884	789	438	285	26,160
1989	7,642	2,599	4,702	5,569	9,375	758	344	82	31,071
1990	12,784	5,564	10,185	8,041	12,349	1,809	369	117	51,218
1991	11,887	6,749	8,011	13,243	16,914	679	2,385	624	60,492
1992	8,010	4,381	5,746	11,139	11,886	181	1,071	478	42,892
1993	6,028	8,367	6,132	13,464	13,118	844	716	577	49,246
1994	5,448	7,006	4,217	12,263	11,407	636	576	812	42,365
1995	3,543	9,063	4,085	17,342	11,428	1,243	895	2,068	49,667
1996	5,437	6,833	5,039	19,743	14,684	777	1,384	3,612	57,509
1997	5,257	7,830	6,299	28,986	15,521	1,609	3,093	2,929	71,524
1998	3,242	10,232	3,692	24,547	8,778	691	1,314	2,517	55,013
1999	7,916	8,518	9,502	28,548	11,574	1,168	2,095	2,760	72,081
2000[a]	9,570	6,755	8,926	18,888	12,126	1,342	3,217	2,349	63,173
2001	10,348	7,455	9,962	24,205	15,215	1,252	2,711	1,143	72,291
2002	12,366	11,917	8,542	17,994	13,364	1,550	2,838	966	69,537
2003	11,788	7,793	7,465	21,727	13,697	2,117	3,325	1,476	69,370
99-03 average	**10,398**	**8,488**	**8,879**	**22,272**	**13,192**	**1,486**	**2,837**	**1,739**	**69,290**
2004[b]	**12,585**	**15,620**	**6,797**	**29,916**	**14,433**	**1,888**[c]	**4,393**	**1,882**[c]	**87,514**

[a] Beginning in 2000, the Glacier Bay SWHS area was changed to include the southern half of Icy Strait and Cross Sound as well as the northern shoreline of Chichagof Island. Prior to 2000, these waters and area was part of the Sitka SWHS area.

[b] Preliminary.

[c] These two fisheries were estimated as an aggregate for the current year.

Table 2. Pacific Salmon Treaty (PST) treaty harvests of Chinook salmon in Southeast Alaska fisheries by gear type, 1999 to 2004, with percentages of seine of total and percentage breakdown between troll and sport of the remainder. The 2003 and 2004 PST treaty harvest estimates by gear type are preliminary, and based on available data and calculations as of November 29, 2004.

	PST Treaty harvests by gear type								Combined Troll and Sport Harvest		
Year	Troll	Sport	Seine	Trap	Drift gillnet	Set gillnet	Total	Seine %	Total	Troll %	Sport %
1999	132,741	53,158	5,968	0	4,976	2,000	198,842	3.0%	185,899	71.4%	28.6%
2000	133,963	41,439	4,587	0	4,504	2,000	186,493	2.5%	175,402	76.4%	23.6%
2001	128,692	44,725	5,498	0	6,002	2,002	186,919	2.9%	173,417	74.2%	25.8%
2002	298,132	45,504	6,144	0	5,353	2,000	357,133	1.7%	343,636	86.8%	13.2%
2003	307,380	49,239	17,624	0	3,634	2,276	380,153	4.6%	356,619	86.2%	13.8%
2004	321,941	66,395	28,763	0	9,387	2,288	428,774	6.7%	388,336	82.9%	17.1%
Average 1999-2004	220,475	50,077	11,431	0	5,643	2,094	289,719	4.0%	270,552	81.5%	18.5%

Table 3. Summary of the all-gear (troll, sport, seine, drift gillnet, and set gillnet) Chinook salmon treaty quota, which is based on post-season abundance index, and the actual all-gear treaty harvest during 1999-2004. Note that the 2004 all-gear quota is preliminary due to it being based on the 2004 pre-season abundance index, and that the 2003 and 2004 all-gear harvest estimates are still preliminary.

Year	All-gear quota	All-gear harvest	Deviation from quota	Percent Deviation
1999	184,164	198,842	14,678	8%
2000	178,500	186,493	7,993	4%
2001	250,259	186,919	-63,340	-25%
2002	371,933	357,133	-14,800	-4%
2003	439,613	380,153	-59,460	-14%
2004	383,536	428,774	45,238	12%

Table 4. Estimated angler effort (salmon fishing hours) in the Juneau, Ketchikan and Sitka marine boat sport fisheries as determined by onsite creel surveys, 1983-2004 (2004 estimates are preliminary).

Year	Juneau	Ketchikan	Sitka
1983	236,344		
1984	246,732	161,100	
1985	269,077		
1986	240,921	133,518	
1987	307,124	157,306	33,130
1988	254,196	153,086	35,763
1989	287,676	195,974	
1990	300,167	199,063	
1991	324,788	275,856	
1992	301,588	192,269	74,183
1993	270,838	198,960	107,184
1994	320,385	230,372	123,971
1995	265,923	175,765	135,866
1996	287,481	188,947	136,585
1997	226,921	144,735	145,114
1998	221,598	163,855	144,850
1999	252,169	136,284	168,793
2000	222,710	124,005	138,705
2001	200,472	135,567	140,571
2002	196,574	192,010	145,123
2003	175,324	168,204	138,633
99-03 avg.	209,450	151,214	146,365
2004	208,437	162,926	135,245

Table 5. Comparison of 2004 cumulative sport harvest rates (HPUE) with prior data.

Sport Fishery	Comparison Dates	Percentage Change from 2003 HPUE	Percentage Change from Mean HPUE	(Basis of Mean HPUE)
Juneau	4/26-9/26	-3%	8%	(1999-2003 Average)
Ketchikan	4/26-9/26	-12%	12%	(1999-2003 Average)
Sitka	4/26-9/26	54%	83%	(1999-2003 Average)
Petersburg	5/03-9/12	-11%	-21%	(1999-2003 Average)
Wrangell	5/05-9/12	-11%%	9%	(1999-2003 Average)
Craig	5/05-9/12	109%	63%	(1999-2003 Average)
Gustavus	5/10-9/12	58%	8%	(2002-2003 Average)
Elfin Cove	5/24-9/06	135%	NA	NA

Table 6. Minimum estimated contributions of hatchery Chinook salmon to sampled marine boat sport fisheries of Southeast Alaska, 2004 (Preliminary) [a].

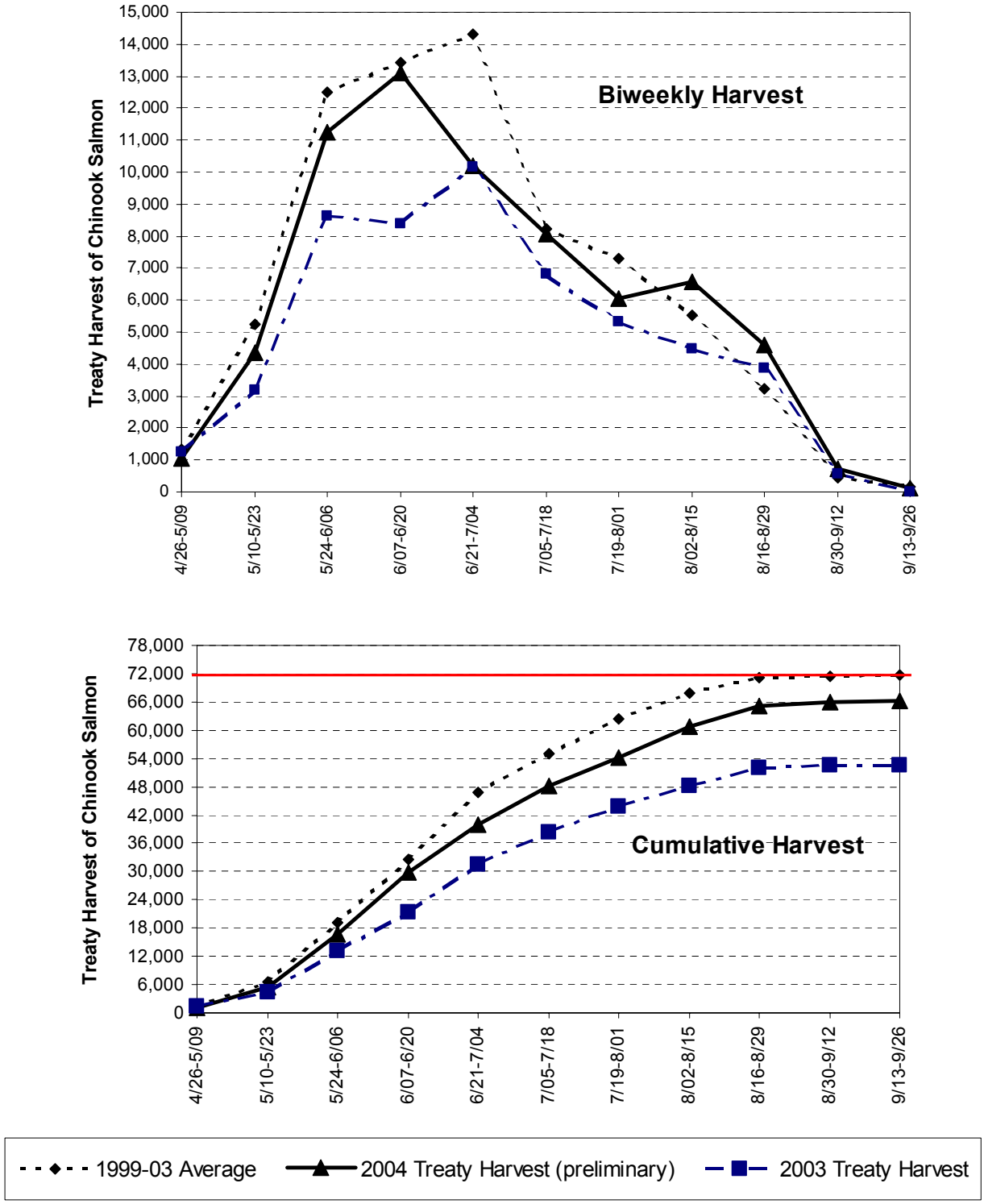
	Marine Boat Sport Fishery								
	Ketchikan 4/26-9/26	Craig 5/03-9/12	Petersburg 5/03-9/12	Wrangell 5/09-9/12	Sitka 4/26-9/26	Juneau 4/26-9/26	Gustavus 5/10-9/12	Elfin Cove 5/10-9/12	Total
Conuma (WCVI)[b]	5	1,625	0	0	2,868	0	2	179	4,679
Nitinat (WCVI)[b]	169	615	0	0	1,610	0	42	272	2,708
Robertson Creek (WCVI) [b]	0	489	0	0	970	0	0	0	1,459
Other Non-Alaska	160	766	18	0	1,980	42	9	349	3,324
Non Alaska Total	334	3,494	18	0	7,428	42	53	800	12,169
ALASKA									
Crystal Lake			71		5	260	26		362
Crystal Lake/Anita Bay	35			396	108		26		565
Crystal Lake/Neets Bay	546	46		51	134				777
Deer Mountain	236				41				277
Macaulay (Gastineau)						3,114	39	50	3,203
Hidden Falls			152		80	356	53	81	722
Little Port Walter		5	2		17	9		3	36
Medvejie		70			1,814		61	159	2,104
Tamgas Creek	527								527
Whitman Lake	2,262	28				36		29	2,355
Alaska Total	3,606	149	225	447	2,199	3,775	205	322	10,928
All area total	3,940	3,643	243	447	9,627	3,817	258	1,122	23,097
Creel Survey Harvest[a]	7,051	13,366	799	1,805	31,358	6,248	484	2,253	63,364
Percent Alaska Hatchery	51%	1%	28%	25%	7%	60%	42%	14%	17%
Percent Alaska Hatchery 5-Yr. Avg.	58%	4%	36%	10%	12%	52%	NA	NA	22%
Percent Total Hatchery	56%	27%	30%	25%	31%	61%	53%	50%	36%

[a] Not all expanded to entire area. Craig, Petersburg, Wrangell, Gustavus, and Elfin Cove estimates are based on catch sampling programs only. Additional terminal area Alaska hatchery harvests included about 1,500 fish (Gastineau/Snettisham) in the Juneau area and 2,500 fish (Crystal Lake) in the Petersburg area.

[b] WCVI = West Coast Vancouver Island hatchery stock.

Table 7. Random CWT recoveries of wild-stock Chinook salmon during 2004 in Southeast Alaska sport fisheries (not expanded for estimated contribution).

	Marine Boat Sport Fishery								
	Ketchikan	Craig	Petersburg	Wrangell	Sitka	Juneau	Gustavus	Elfin Cove	Total
ALASKA									
Chickamin River	1								1
Chilkat River						2			2
Stikine River			1	1					2
Taku River						8		1	9
Unuk River	4				1				5
Alaska Total	7		1	1	1	10		1	19
NON-ALASKA									
Hanford Reach (WA)	1	1			7		1	1	11
Lewis River (WA)		2							2
Non-Alaska Total	1	3			7		1	1	13
Wild Total	8	3	1	1	8	10	1	2	32



2003 average adjusted to obtain a treaty harvest of 71,689 fish.

Figure 1. Biweekly and cumulative harvests of Chinook salmon in the 2004 Southeast Alaska sport fishery through September 26th in comparison to the 1999-2003 average (adjusted to obtain a harvest of 71,689 treaty Chinook salmon) and the 2003 harvest.

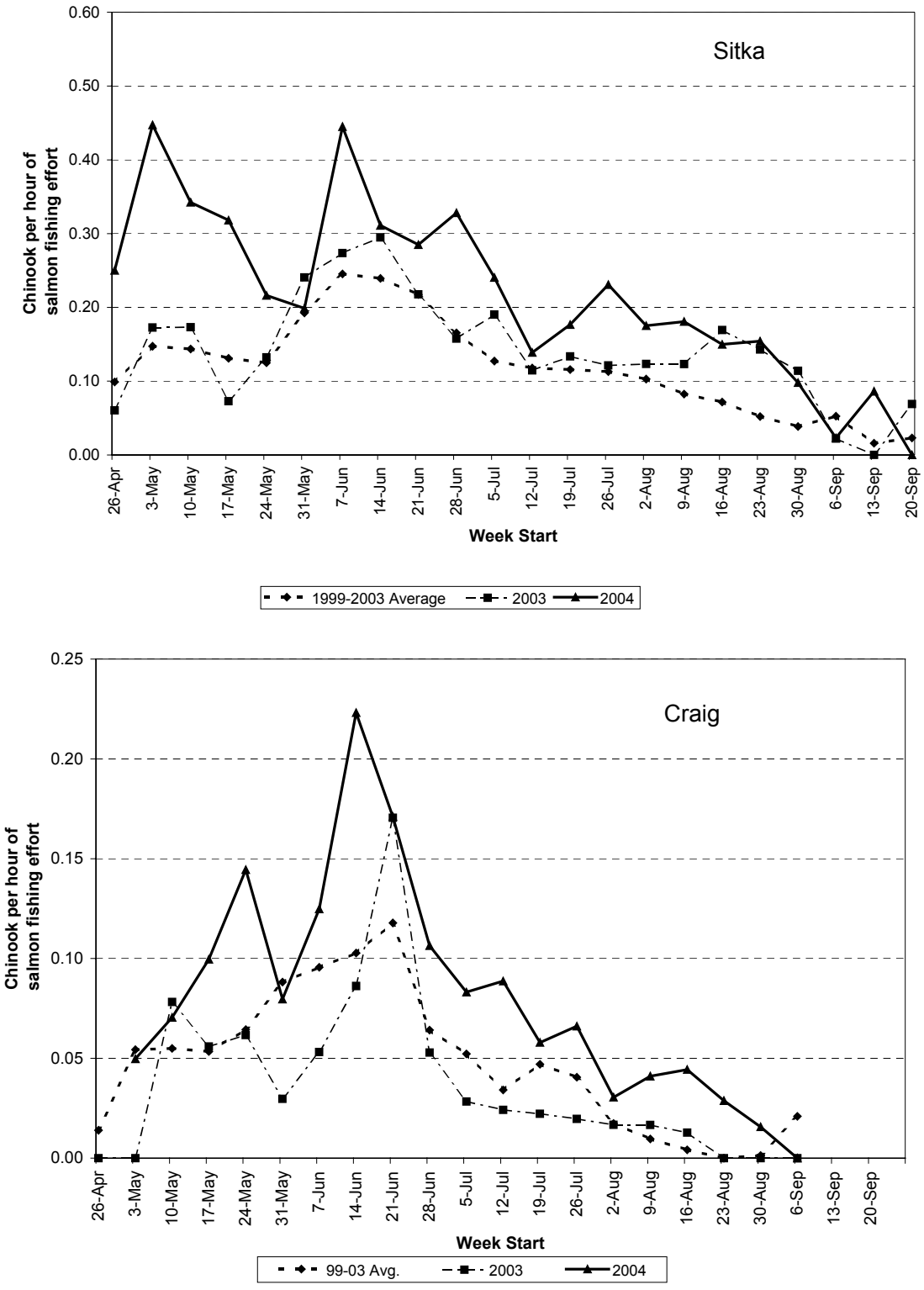


Figure 2. Weekly harvest rates (harvest per angler-hour of salmon fishing effort) for Chinook salmon in the sport fisheries through September 26th in Sitka and September 12th in Craig.

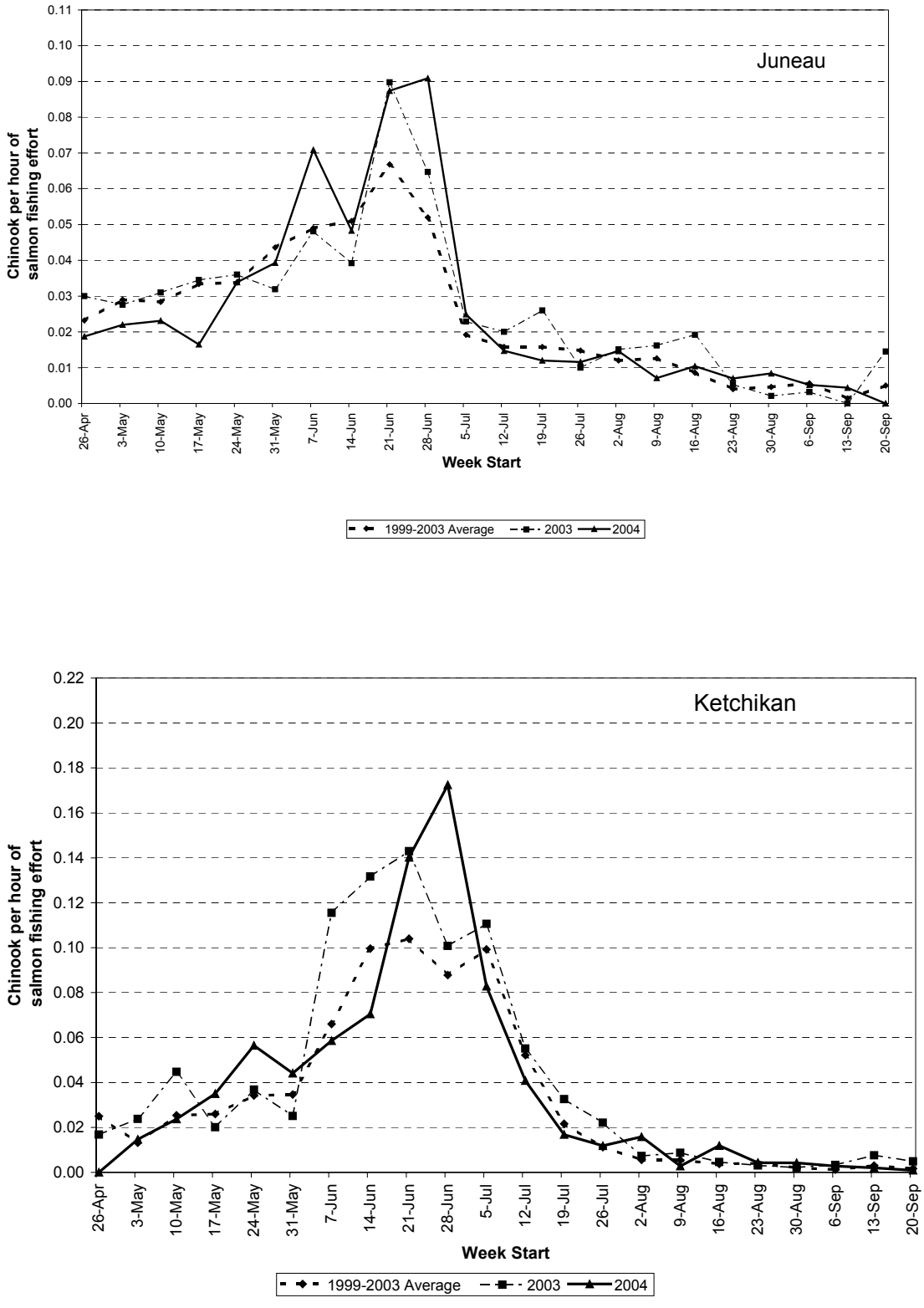


Figure 3. Weekly harvest rates (harvest per angler-hour of salmon fishing effort) for Chinook salmon in the sport fisheries through September 26th in Juneau and Ketchikan.

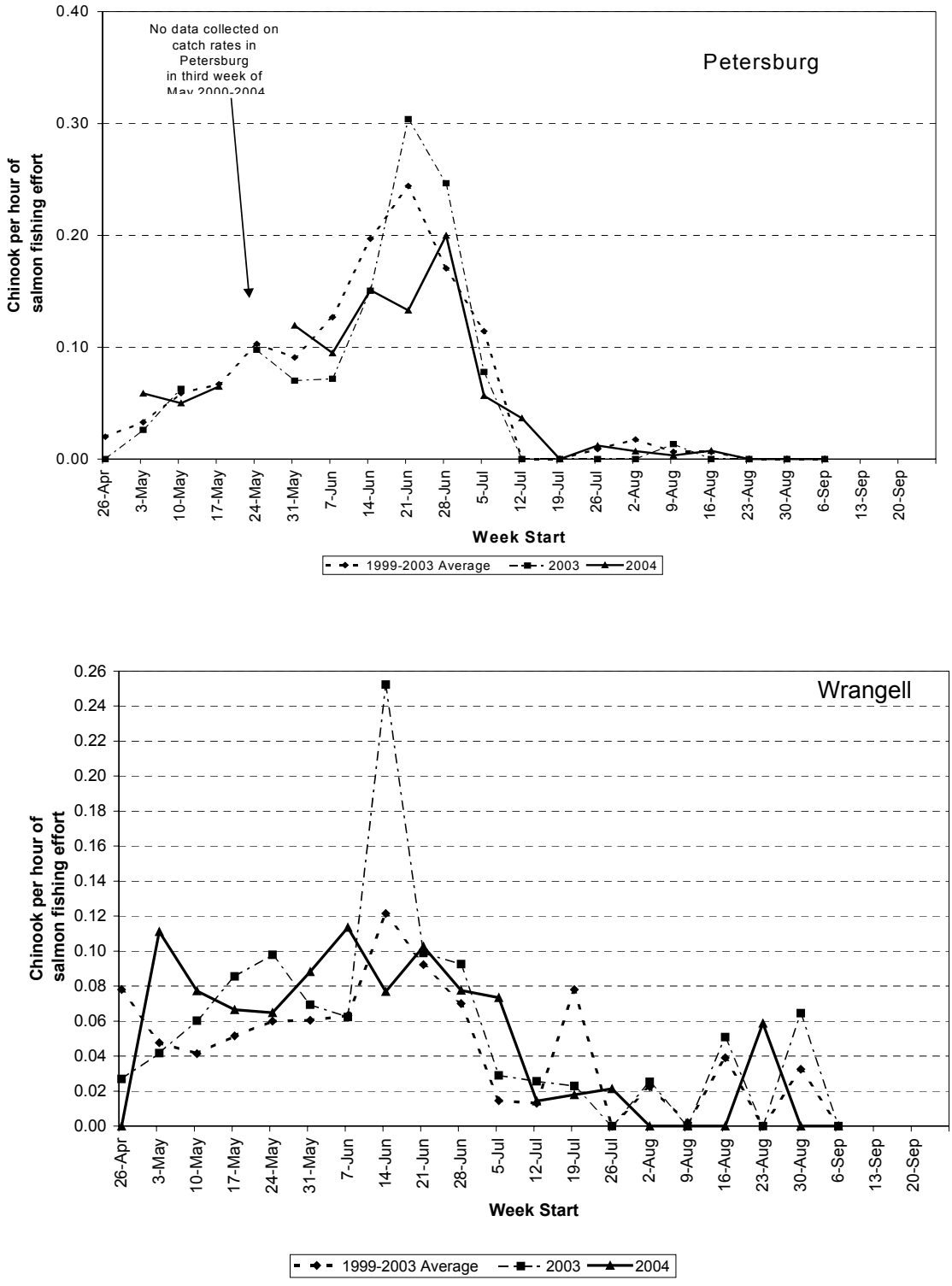
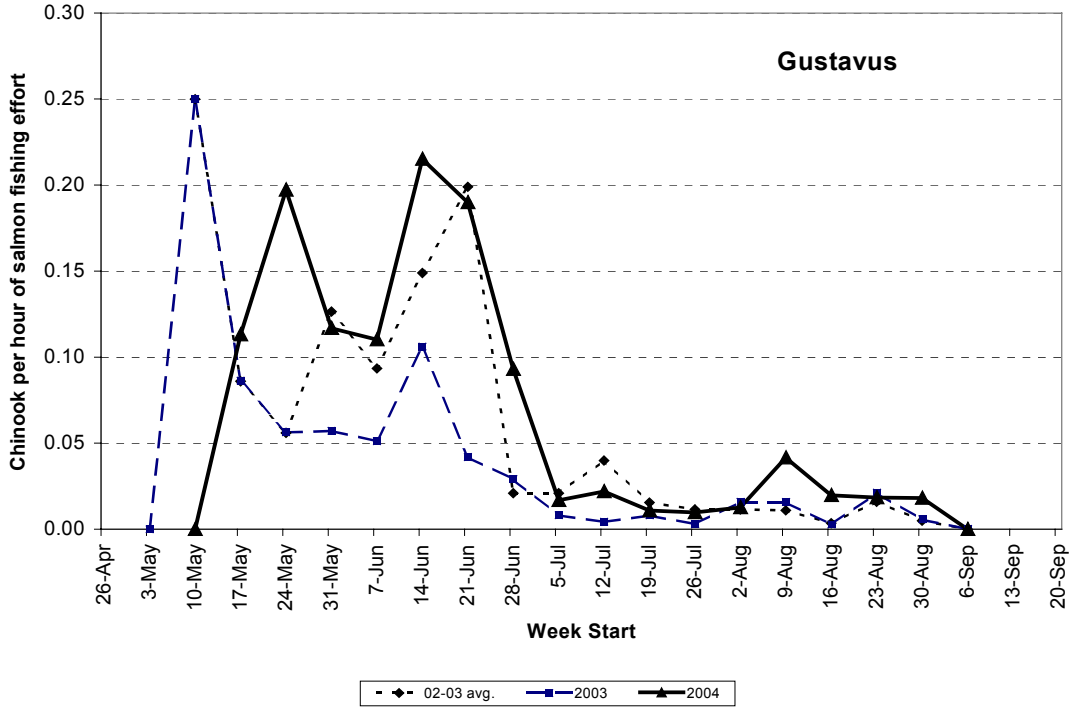


Figure 4. Weekly harvest rates (harvest per angler-hour of salmon fishing effort) for Chinook salmon in the sport fisheries through September 12th in Petersburg and Wrangell.



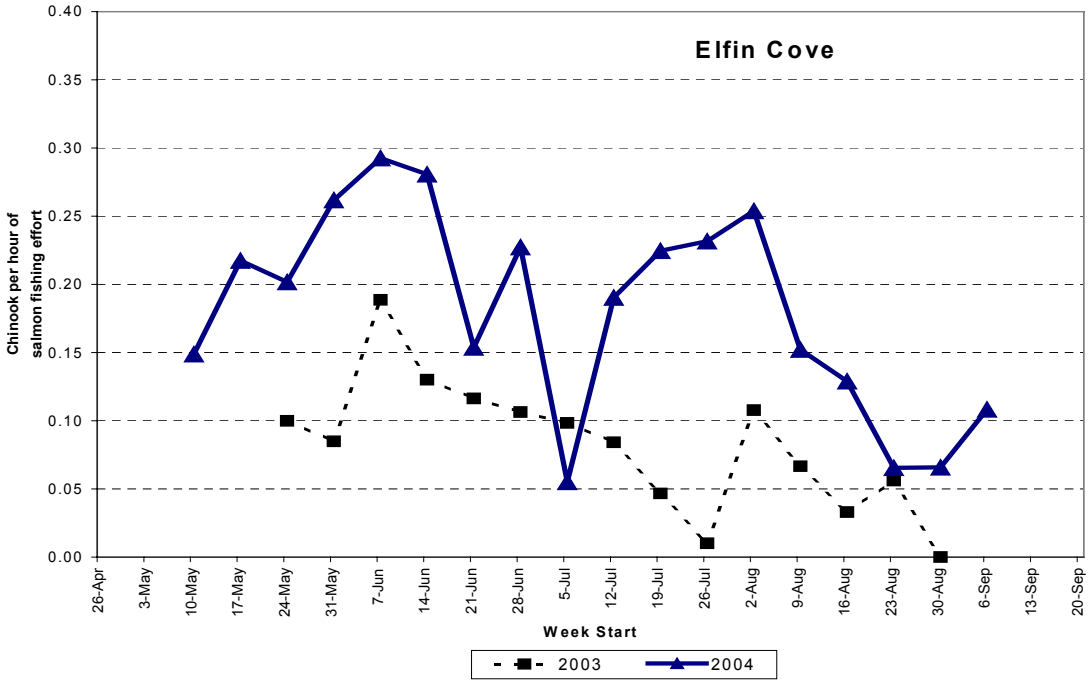


Figure 5. Weekly harvest rates (harvest per angler-hour of salmon fishing effort) for Chinook salmon in the sport fisheries during May 10th through September 12th in Gustavus and Elfin Cove.

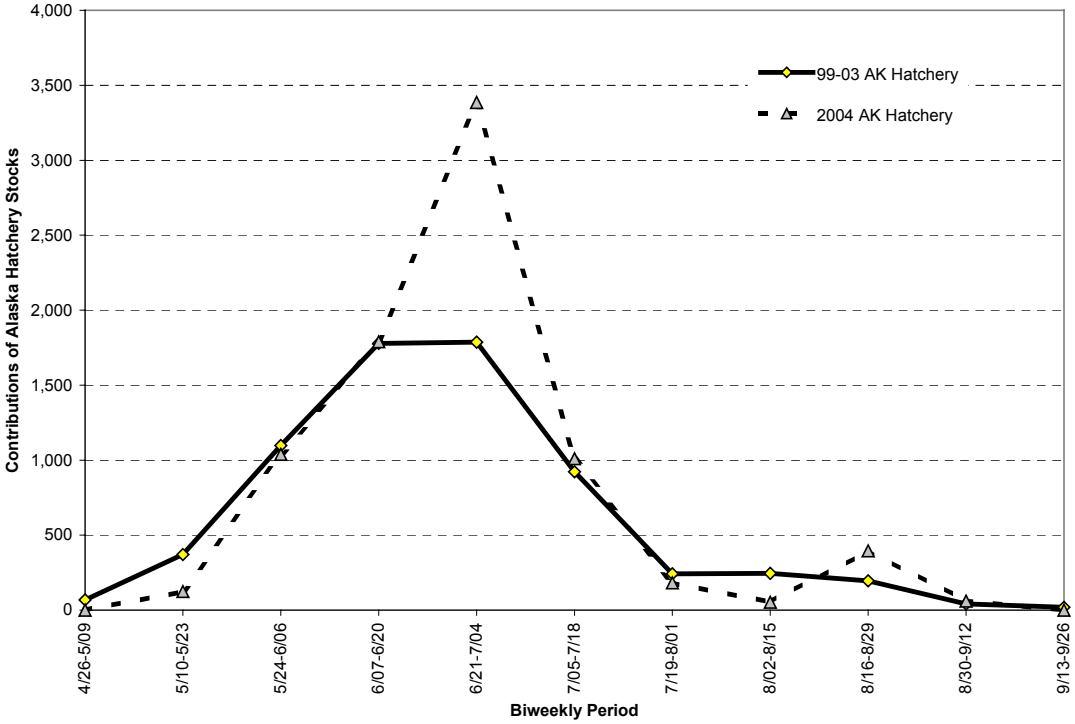


Figure 6. Biweekly comparison of the 1999-2003 average and 2004 inner coast hatchery contributions from Alaska hatchery Chinook salmon stocks.

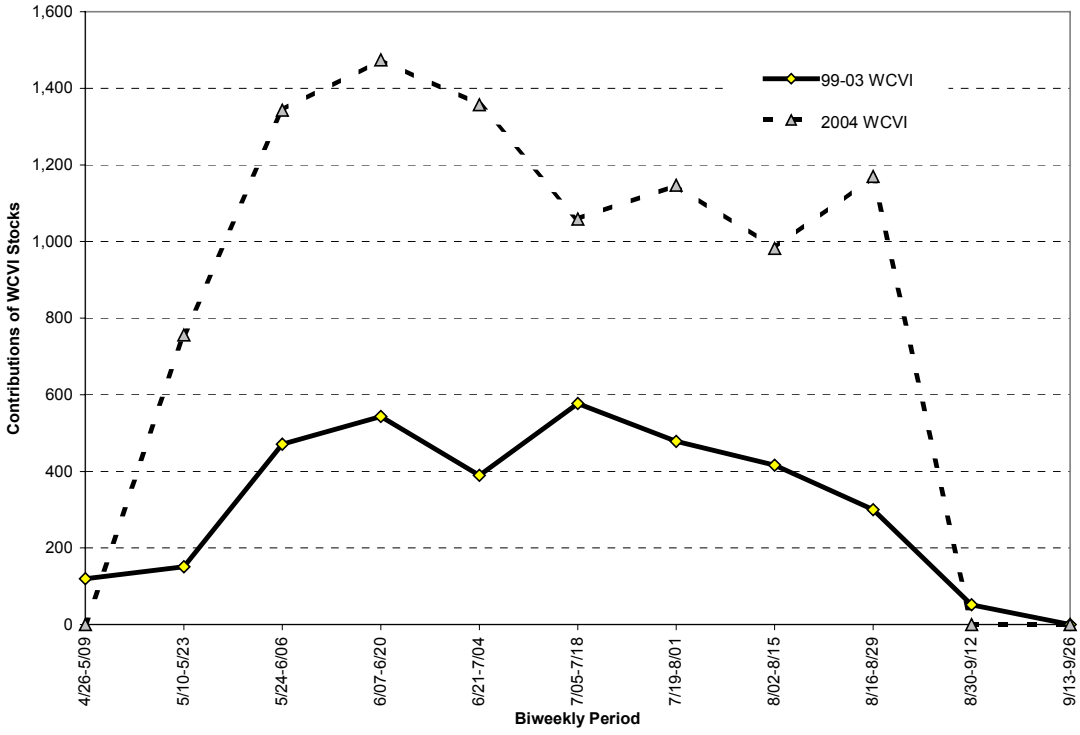


Figure 7. Biweekly comparison of the 1999-2003 average and 2004 outer coast hatchery contributions from West Coast Vancouver Island (WCVI) Chinook salmon stocks.

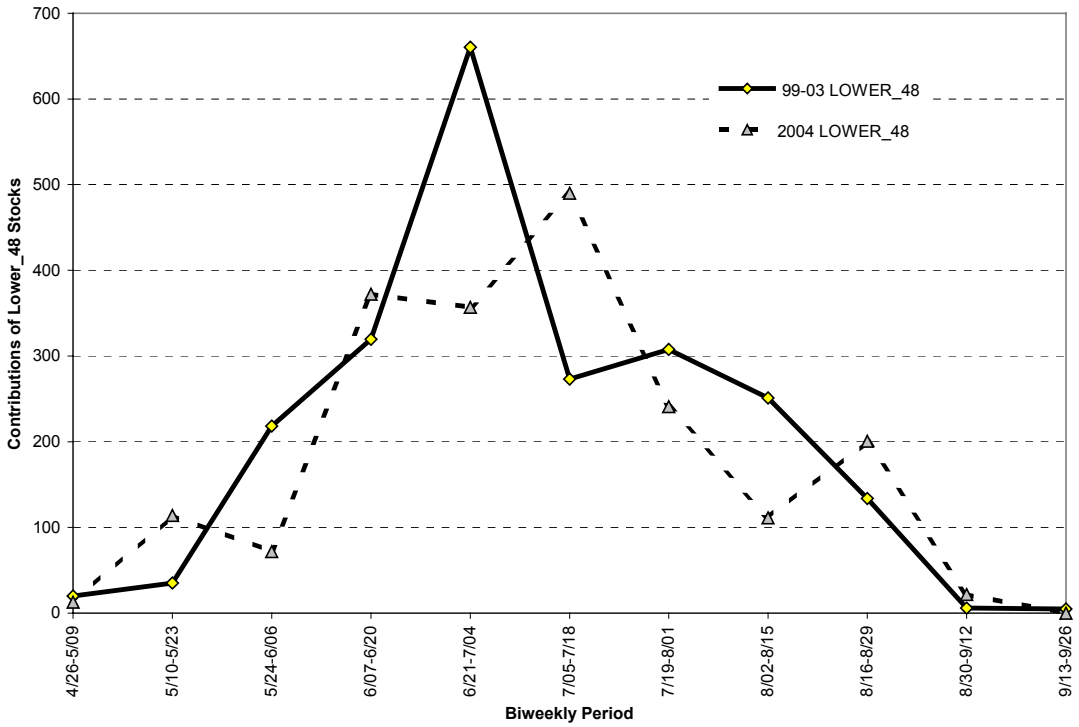


Figure 8. Biweekly comparison of the 1999-2003 average and 2004 outer coast hatchery contributions from combined "Lower_48" (Washington, Oregon, Idaho) tagged Chinook salmon stocks (not all lower 48 hatchery releases are coded wire tagged).

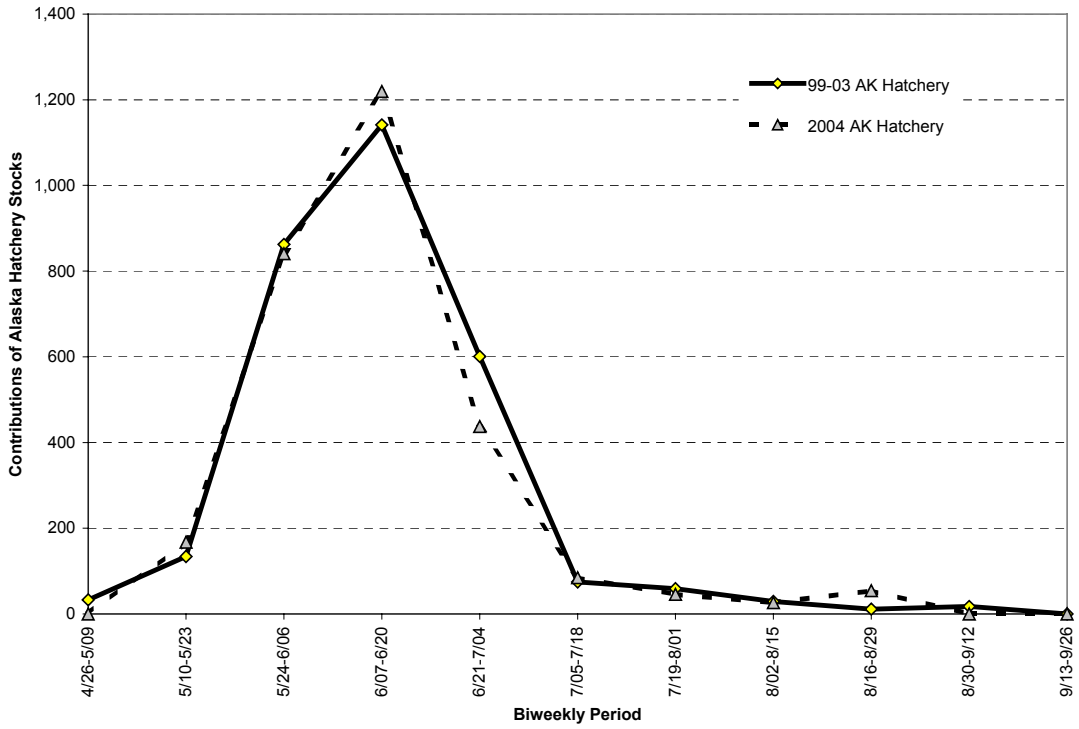


Figure 9. Biweekly comparison of the 1999-2003 average and 2004 outer coast hatchery contributions from Alaska hatchery Chinook salmon stocks.